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THE

# New Public Buildings,

ON

PENN SQUARE,

IN THE CITY OF PHILADELPHIA.

DESCRIPTION OF THE BUILDINGS.

STATISTICS AND PROGRESS OF THE WORK UP TO  
JANUARY 1, 1881.

THE BILL PROVIDING FOR THE ERECTION OF NEW PUBLIC BUILDINGS  
FOR THE CITY OF PHILADELPHIA PASSED BOTH BRANCHES OF  
THE STATE LEGISLATURE IN APRIL, 1870, AND ON  
THE 5TH OF THE FOLLOWING AUGUST THE  
GOVERNOR AFFIXED HIS SIGNA-  
TURE THERETO.



PRINTED FOR THE COMMISSIONERS.

PHILADELPHIA:

1881.

# COMMISSIONERS

For the Erection of the Public Buildings.

THOMAS J. BARGER,	SAMUEL W. CATTELL,	HIRAM MILLER,
WILLIAM BRICE,	MAHLON H. DICKINSON,	RICHARD PELTZ,
ISAAC S. CASSIN,	THOMAS E. GASKILL,	SAMUEL C. PERKINS.
JOSEPH L. CAVEN,	JOHN L. HILL,	GEORGE A. SMITH,
	WILLIAM S. STOKLEY.	

## OFFICERS.

PRESIDENT—SAMUEL C. PERKINS.

SECRETARY—FRANCIS DE HAES JANVIER.

TREASURER—J. J. MARTIN.

SOLICITOR—CHARLES H. T. COLLIS.

ARCHITECT—JOHN MCARTHUR, JR.

ASSISTANTS—JOHN ORD, JR., THOMAS U. WALTER.

SUPERINTENDENT—WILLIAM C. MCPHERSON.

## DIMENSIONS OF BUILDING.

From North to South, . . . . .	486 feet 6 inches.
“ East to West, . . . . .	470 feet.
Area, . . . . .	4½ acres.
Height of Main Tower, . . . . .	535 feet.
Width at Base, . . . . .	90 feet.
Centre of Clock Face, . . . . .	{ 361 feet above pavement,
Diameter of Clock Face, . . . . .	
Height of Upper Balcony, . . . . .	20 feet.
Total Number of Rooms in Building, . . . . .	296 feet.
Total Amount of Floor-room is . . . . .	520.
Height of each centre Pavilion, . . . . .	14½ acres.
“ corner Towers, . . . . .	202 feet 10½ inches.
“ Basement Story, . . . . .	161 feet.
“ Principal Story, . . . . .	18 feet 3½ inches.
“ Second Story, . . . . .	33 feet 6 inches.
“ Third Story, centre Pavilions, . . . . .	35 feet 7 inches.
“ “ “ Wings, . . . . .	26 feet 6 inches.
“ “ “ Curtains, . . . . .	24 feet 3 inches.
“ Attic of centre Pavilions, . . . . .	20 feet 5 inches.
“ Attic of corner Towers, . . . . .	15 feet.
“ Crowning Statue, . . . . .	13 feet 6 inches.
“ Figures on centre Dormers, . . . . .	36 feet.
“ “ corner Dormers, . . . . .	17 feet 6 inches.
	12 feet 10 inches.

## COST.

Total expenditures to January 1, 1881, \$6,922,007 50.

## DESCRIPTION OF THE BUILDINGS

### THE EXTERIOR.

A tendency exists in the public mind to seek to classify every considerable architectural design under the head of some "order" or "style;" but modern genius and taste deal so largely in original adaptations of classic and other forms that we often find no small difficulty in deciding under which, if any, of the heretofore established *orders* or *styles* many of the most important structures of the present day can properly be classed.

The architecture of the New Public Buildings is of this character. It is essentially modern in its leading features, and presents a rich example of what is known by the generic term of the "Renaissance," modified and adapted to the varied and extensive requirements of a great American municipality.

It is designed in the spirit of French art, while at the same time its adaptation of that florid and tasteful manner of building is free from servile imitation, either in ornamentation or in the ordonnance of its details.

This immense architectural pile is located on the intersection of Broad and Market Streets, in the City of Philadelphia. It consists of a single building, under one roof, occupying, inclusive of the court-yard, an area of nearly  $4\frac{1}{2}$  acres. The horizontal dimensions of the structure are a square of 428 feet, with added projections for convenience and architectural effect, making its extreme length 470 feet from east to west, and  $486\frac{1}{2}$  feet from north to south.

The four fronts are similar in design. In the centre of each an entrance pavilion, of 89 feet in width, rises to the height of 202 feet  $10\frac{1}{2}$  inches, flanked by receding wings of 53 feet in length by 128 feet  $10\frac{1}{2}$  inches elevation, and receding curtains 119 feet  $1\frac{1}{2}$  inches high and 65 feet 6 inches long, terminating at each of the four corners of the building with towers or pavilions of 51 feet square and 161 feet high.

The whole exterior is bold and effective in outline and rich in detail, being elaborated with highly ornate columns, pilasters, pediments, cornices, enriched windows, and other appropriate adornments, wrought in artistic forms, expressing American ideas and developing American genius.

The main entrances open through the centre pavilions on the four fronts, affording passages for pedestrians up and down Broad and Market Streets, directly through the basement story. Each of these entrances is 18 feet wide and 36 feet high, finished with ornamented archivolt and richly sculptured spandrels.

In addition to the main entrances through the central pavilions, there are two in each of the four corner pavilions, communicating with each floor by broad and easy flights of stone stairways extending from the pavement line to the roof.

The basement story is 18 feet  $3\frac{1}{2}$  inches high, and stands entirely above the line of the pavement. Its exterior is composed of fine white granite of massive proportions, forming a fitting base for the vast super-structure it supports.

The exterior of the building, above the basement, includes a principal story of  $33\frac{1}{2}$  feet, and a second story of 35 feet 7 inches; the centre pavilions having each an additional story of 26 feet 6 inches surmounted by an attic of 15 feet, crowned with a massive dormer window in marble, of 37 feet in height, flanked by marble caryatides 17 feet 6 inches high between cap and base, or 21 feet 6 inches over all.

The third story of the wings is 24 feet 3 inches high to the top of the marble dormers, while the roof structure, rising with gradual curve from the stylobate, gives an additional height of 17 feet 3 inches, making the full exterior height of this story 41 feet 6 inches.

The third story of the curtains, which connect the wings of the centre pavilions with the corner pavilions, is 20 feet 5 inches high to the top of the marble dormers, including the height of the stylobate, which is 5 feet; while the roof structure, rising from the stylobate with a gradual inclination, gives an additional height of 11 feet 4 inches, making the full exterior height of this story upon the curtains 31 feet 9 inches.

All the dormers in the building project from the roof structure in continuation of the perpendicular line of the elevation.

The corner pavilions have each an attic of 13 feet 6 inches, terminated by dormers 27 feet 9 inches high, with caryatic supporters 12 feet 10 inches in height between the cap and base.

The entire superstructure, including all its mural embellishments, is composed of white marble from the quarries at Lee, in Berkshire county, Massachusetts.

A court-yard of 186 feet north and south by 220 feet east and west is located in the centre of the structure, which, together with two additional open areas, each measuring 45 feet north and south by 69 feet east and west, afford abundance of light and air to all the adjacent portions of the building. The principal stories facing the court-yard are, for the most part, each divided by a mezzanine or half story, affording increased space for smaller rooms.

From the north side of the central court-yard rises a grand tower of 90 feet square at the base, gracefully falling off at each story until it becomes, at the spring of the dome (which is 395 feet 2 inches above the level of the court-yard), an octagon of 56 feet in diameter, tapering to the height of 103 feet 10 inches, where it is crowned with a statue of the founder of Pennsylvania, 36 feet in height, thus completing the extraordinary altitude of 535 feet, making it the highest artificial construction in the world, while at the same time it possesses the elements of firmness and stability equal in degree to those of any known structure of like character.

The foundations of this tower are laid on a bed of solid concrete, eight feet thick and ninety feet square, at the depth of 20 feet below the surface of the ground, and its walls, which at the base are 22 feet in thickness, are built of dressed dimension stones, weighing from two to five tons each.

## THE INTERIOR.

The entire structure will contain 520 rooms, affording ample, convenient, and stately accommodations for the immediate wants of all the Departments of the City Government included under the heads of Legislative, Executive, and Judicial; besides which, an amount of surplus room remains for use in the classification and preservation of the archives of the city, for storage and for increased accommodations, which will undoubtedly be required from time to time by the natural increase of the public business and the accumulation of the public records.

The actual floor room included within the walls amounts to 631,438 superficial feet, or  $14\frac{1}{2}$  acres, inclusive of the sub-basement, which extends under the whole structure.



The several stories will be approached by four large *elevators*, located at the intersections of the leading corridors, so as to facilitate the intercourse of the citizens with the public offices, courts, and other branches of the Government. In addition to these means of approach there will be large and convenient stairways in the four corner pavilions and a grand staircase in each of the centre pavilions, on the north, south, and east fronts.

Every room in the building will be well lighted, warmed, and ventilated, upon a thorough, effective, and approved system, and every part of the structure will be absolutely fireproof.

The heating and ventilating apparatus for the eastern half of the work is now virtually completed, and in operation. The system adopted to accomplish these objects consists in drawing a given quantity of pure external air from the court-yard into passages 15 feet wide and 11 feet high, constructed for the purpose, under all the corridors of the basement story, and forcing it, by means of a steam fan, among and around stacks of radiators heated by steam boilers, into all the rooms and corridors of the basement and superstructure of the eastern half of the building.

The fan is located in the southern portion of the sub-basement. It has a disc of 12 feet in diameter, with 16 wings on each side, and is capable of delivering 855 cubic feet of air per each revolution. It is driven by a horizontal engine of 20 horse power, and admits of being run up to 120 revolutions per minute, which will deliver throughout the eastern half of the building at the rate of 102,564 cubic feet of air per minute.

The warm air is generated by 6 half-tubular boilers, 60 inches in diameter and 14 feet long, each containing 43 *four-inch* tubes, and a steam dome 30 inches in diameter and 30 inches high. The boilers are each  $65\frac{3}{4}$  horse power, making an aggregate of horse power amounting to  $394\frac{1}{2}$ . They are set in nests of *three*, and the pipes and connections are so arranged that each boiler may be used independently or in connection, as may be required.

This process of heating produces a forced ventilation, inasmuch as the air introduced into the rooms of necessity displaces an equal quantity of vitiated air, which escapes through ventilating registers opening near the floor in every room, and connecting with large exhaust shafts which discharge at the height of 170 feet above the level of the ground.

None of the apparatus for heating and ventilating the western half of the building is yet provided for.



The following materials have been used in the foundations and in the portions of the superstructure already executed, to wit:—

80,325	cubic feet of concrete foundations.
824,865	cubic feet of foundation stone, from Conshohocken, Pa.
190,703	cubic feet of dressed granite, in the exterior of the basement and sub-basement, from Concord, N. H., and Blue Hill, Maine.
467,086.05	cubic feet of marble, from Lee, Mass.
73,739.05	cubic feet of buff and blue sandstone, from Ohio.
2,552	cubic feet red sandstone, from Hummelstown, Pa.
14,360	cubic feet of polished granite, from the quarries on the Magaguadavic River, near St. George, N. B., and from Quincy and Cape Ann, Mass.
8,772	cubic feet of hammered granite, from Concord, N. H.
12,500	cubic feet of polished marble, from Pennsylvania and from Rutland, Vt.
46,210,150	hard bricks.
171,300	pressed bricks.
135,000	white bricks.
85,931	enamelled bricks.
1201 tons 1679 lbs.	of wrought iron beams for floors and roofs.
74 tons 667 lbs.	of wrought iron clamps, tie-rods, bolts, braces, compound girders, &c.
757 tons	of cast iron ceilings, lintels, plates, askewbacks, iron bricks, cast iron door and window trimmings, &c.
23,750	square feet of bond slate.

The excavations for the cellars and the foundations required the removal of 145,870 cubic yards of earth.

The preparation of the ground for excavations involved the change of the gas pipes, and of the two water mains of 20 and 30 inches in diameter, from their course through the centre of Broad Street, to a circuit around the site of the buildings. The tracks of the West Philadelphia Passenger Railway were changed from the centre of Market Street and laid around the site; and the Freight Railroad owned by the city, and which ran through Market Street, was entirely removed after it had ceased to be of use in the transportation of materials for the buildings. These changes involved a heavy outlay, which was charged to the Commissioners.

The entire ornamentation of the stone work of the exterior, and also the decorative work of the dressed stone for interior finish, has been carved in this city from models specially prepared by Alexander M. Calder and his assistant, James G. C. Hamilton. A large room in the basement on the western side of the southern entrance has been used as a modelling room since October, 1877.

The Supreme Court of the State has had its accommodations since January 1, 1877 (including the Prothonotary's Office), on the first story of the south front, occupying all the rooms on the south side of the corridor west of the centre pavilion. The addresses delivered at the opening of the session, Monday, January 1, 1877, are reported in Vol. 82 of Pennsylvania State Reports (1 Norris).

The Highway Department was opened for business in the New Buildings December 10, 1878, occupying rooms on the first story of the eastern front, south of the central pavilion.

The Survey Department removed July 1, 1879, to rooms south of the central pavilion, on the same floor and front with the Highway Department.

The Head-Quarters of the Division, and of the First Brigade of the National Guard of Pennsylvania, were provided with convenient rooms adjoining those intended for the Department of Markets and City Property, and on November 1, 1879, Major-General John F. Hartranft and Brigadier-General George R. Snowden, commanding the Division and Brigade, took possession of their respective quarters.

Since January 1, 1880, the following Departments have removed to rooms fitted up for their accommodation in the new buildings :

Boiler Inspectors, January 17, 1880.

Board of Revision of Taxes, March 1, 1880.

Markets and City Property, April 21, 1880.

Receiver of Taxes, May 3, 1880.

It is expected during the year 1881 to complete the rooms for the City Treasurer, City Controller, City Commissioners, and Commissioners of Fairmount Park.

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